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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,336	03/24/2004	William A. Peterson JR.	051252-5050-03	3493

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SEIMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
170 WOOD AVENUE SOUTH
ISELIN, NJ 08830

EXAMINER

MCGRAW, TREVOR EDWIN

ART UNIT

PAPER NUMBER

3752

MAIL DATE

DELIVERY MODE

01/26/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/807,336

Applicant(s)

PETERSON, WILLIAM A.

Examiner

Trevor E. McGraw

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2009.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-27 is/are pending in the application.
4a) Of the above claim(s) 16-22 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 23-27 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/22)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Arndt et al (US 5,766,441).

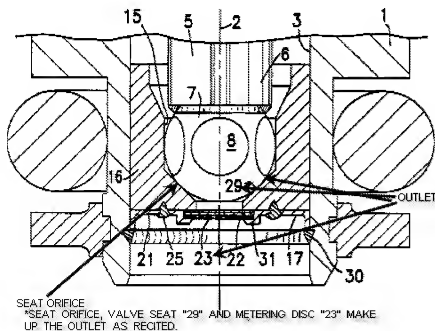
In regard to Claim 23, Arndt et al teach a method of controlling a spray of fuel through at least one metering orifice of a fuel injector (column 3, lines 53-55), the method comprising providing the fuel injector (column 3, lines 53-55) having an inlet (inlet that supplies fuel to the injection valve) and an outlet (see first figure provided below) and a passage (3) extending along a longitudinal axis (2) therethrough, the outlet having a seat (29) and a metering disc (23), the seat (29) having a seat orifice (see "seat orifice" in the first figure provided below) and a first channel surface extending obliquely to the longitudinal axis (see curved surface of "35" that serves as the first channel surface in Figures 21 and 22 where the first surface of the flow channel between "36" and "38" is not parallel or perpendicular to the longitudinal axis "2"; see second Figure below), the metering disc (23) including a second channel surface (see surface of "37" in relation to the surface of "35" in Figure 21) confronting the first

channel surface ((see curved surface of "35" that serves at the first channel surface in Figures 21 and 22 where the first surface of the flow channel between "36" and "38") so as to provide a flow channel (channel between "36" and "38") that is separate from but in communication with the seat orifice (see "seat orifice" in the first figure provided below), the metering disc (23) having a plurality of metering orifices (38) extending therethrough along the longitudinal axis (2) and located about the longitudinal axis (2), the metering orifices (38) being in communication with the flow channel , locating all of the metering orifices (38) on a first virtual circle (see Figure 31 where "38" is shown on a virtual circle) outside of a second virtual circle formed by a virtual extension of a sealing surface of the seat (seat as shown in Figure 1) on the metering disc such that each of the metering orifices extends generally parallel to the longitudinal axis through the metering disc and imparting a radial velocity to the fuel flowing from the seat orifice through the flow channel (channel between "36" and "38") so that fuel flows in transverse direction across and through the fuel metering orifices (38; see where flow travels transverse and out of "38" in Figures 4-8 and 10).

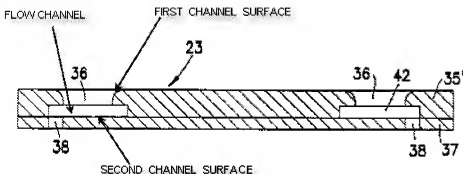
In regard to Claims 24-27, Arndt et al also teach where the locating of the metering orifices (38) includes spacing a first metering orifice (first "38" on virtual circle) at a first arcuate distance relative to a second metering orifice (second "38" on virtual circle) on the first virtual circle (as shown in Figure 31) and the imparting of a radial velocity to the fuel flow includes configuring the flow channel (channel between "36" and "38") to extend between a first position and a second position, the first position being located at a first distance (distance of "36" from axis) from the longitudinal axis and at a

first spacing along the longitudinal axis relative to the second surface of the metering disc (bottom part of "23") and the second position being located at a second distance from the longitudinal axis and a second spacing along the longitudinal axis from the second surface of the metering disc (bottom part of "23"), such that a product of the first distance and first spacing is generally equal to a product of the second distance and a second spacing where the imparting increases and decreases the radial velocity between the seat orifice and each of the metering orifices (distances closer together increase the radial velocity and distances further apart decrease the radial velocity as shown in the Figures of Arndt et al).

First Figure



Second Figure



Response to Arguments

Rejection under 35 USC § 102

Applicant's arguments filed 09/29/2009 have been fully considered but they are not persuasive. Examiner cannot agree with Applicant's assertions stated on pages 8-9. Examiner notes that Ardnt et al does denote a flow channel and clearly shows where the fuel injector has a valve seat with an orifice and a first channel surface that extends obliquely to the longitudinal axis. Examiner has shown in the first and second figures above the location of the features that Applicant has said on the record that Ardnt et al lacks. Ardnt et al as shown in the figures provided clearly teaches having an orifice, valve seat and first channel surface that is orthogonal to the longitudinal axis as

required by Claim 23. As a result, Examiner maintains the rejection against Claims 23-27.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor E. McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/T. E. M./
Examiner, Art Unit 3752

/Len Tran/

Supervisory Patent Examiner, Art Unit 3752